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ART 34 ANDT

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NEW SET OF CLAIMS

1. A process for combusting coke of a coke-containing FCC catalyst in a regeneration unit of a FCC unit comprising the introduction of oxygen-containing gas through a gas transport unit (7) into the regeneration unit (2) and combusting the coke means of an oxygen-containing gas, characterized in that the oxygen-containing gas is cooled in a cooling unit (8) to a temperature below the dew point of water present in the gas thereby giving condensation of water, wherein the condensed water is separated from the gas before it is brought in contact with the coke-containing FCC catalyst.
2. The process according to claim 1, wherein the oxygen-containing gas is cooled before or during its stay in the gas transport unit.
3. The process according to claim 2 wherein the oxygen-containing gas is cooled before its stay in the gas transport unit.
4. The process according to any one of claims 1-3 wherein the oxygen-containing gas is air.
5. The process according to claim 4, wherein the air has a temperature higher than 25°C, preferably higher than 30°C.
6. The process according to any one of claims 4-5, wherein the air has a water content before cooling of between 50 and 100% of total saturation, preferably between 75 and 100% of total saturation.
7. The process according to any one of claims 4-6, wherein the air is cooled with a temperature differential from 35 to 10°C.

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8. The process according to any one of claims 1-7 wherein the gas transport unit (7) is an air blower.

9. The process according to any one of claims 1-8 wherein cooling is performed in an industrial chiller (8).

10. A method for decreasing the thermal deactivation of a catalyst in an FCC regeneration process, characterized in that the regeneration process is performed by applying the process according to any one of claims 1-9.

11. A regenerator apparatus for performing the process according to claims 1-9 comprising inlet and outlet means (3, 4, 5, 14), and an inlet (6), wherein the apparatus further comprises a gas transport unit (7) located in or at inlet means (6) of the regenerator unit (2), and a cooling unit (8) in the transport unit or upstream the transport unit at its suction side.

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